

- 1. An apparatus for connection to an excavator or other machine, the apparatus including:
 - a hammer having an impacting end for impacting a working surface;
 - a drive mechanism for reciprocating the hammer;
 - a housing in which the hammer is received, the housing being configured for attachment to said machine, the impacting end of the hammer extending in use from an open end of the housing;
 - a locking mechanism including a locking member and an actuator, characterised in that the actuator is capable of forcing a hammer-engaging face of the locking member to engage at one or more points along a face of the hammer to lock the hammer within the housing such that the impacting end protrudes from the open end of the housing, thereby allowing the protruding end of the hammer to also be used for pushing or raking material.
- The apparatus as claimed in claim 1 wherein the locking member is a cam and the actuator pivots the cam to press a hammer-engaging face of the cam to engage with a face of the hammer to lock the hammer within the housing, the cam being shaped such that any force acting to pushing the hammer into the housing with the locking mechanism engaged acts to rotate the cam and thereby hold the hammer more firmly.
- 3. The apparatus as claimed in claim 1 or claim 2 wherein the locking member engages with a face of the hammer by rotation about a first axis of rotation, the locking member having an eccentric rotational peripheral profile about said first axis of rotation.
- 4. The apparatus as claimed in claim 3, wherein rotation of the locking member in the engaged position due to upward movement of the hammer increases the force of engagement engaged between the locking member and the hammer.
- 5. The apparatus as claimed in claim 4, wherein said rotation causes portions of the eccentric peripheral profile with an increasing radius into contact with the hammer.

Amended Sheet IPEA/AU ART 3A ARADT

- 6. The apparatus as claimed in any one of claims 3-5, wherein the actuator causes rotation of the locking member about said first axis of rotation via at least one intermediate linkage, pivotally attached about a second and third axis of rotation to the locking member and actuator respectively.
- 7. The apparatus as claimed in any one of the preceding claims wherein a projection is provided on the hammer and the drive mechanism includes a loop of chain having at least one dog fixed thereto and a motor for rotating the chain, the dog abutting the projection to move the hammer away from the opening end of the housing.
- 8. The apparatus as claimed in any one of the preceding claims wherein the drive mechanism is mounted within the housing.
- The apparatus as claimed in any one of the preceding claims wherein both the drive mechanism and actuator are hydraulically powered.
- 10. The apparatus as claimed in any one of the preceding claims wherein the apparatus is connected to an excavator or other machine via an articulated arm.
- A method of locking a hammer in an apparatus as claimed in any one of claims 1-10 within the housing such that the impacting end protrudes from the open end of the housing, thereby allowing the protruding end of the hammer to be used for pushing and/or raking material, said method including;
 - activating the actuator to engage a hammer-engaging face of the locking member at a point along a face of the hammer to lock the hammer to the housing.
- 12. A method of locking a hammer within the housing of an apparatus adapted for connection to an excavator or other machine to allow an impacting end of the hammer to protrude from the open end of the housing enabling the protruding end of the hammer to be used for pushing and/or raking material, the apparatus including:

ART 34 AMOT

- a hammer having an impacting end for impacting a working surface;
- a drive mechanism for reciprocating the hammer;
- a housing in which the hammer is received, the housing being configured for attachment to said machine, the impacting end of the hammer extending in use from an open end of the housing;
- a locking mechanism including a locking member and an actuator, said method including;
- activating the actuator to engage a hammer-engaging face of the locking member at a point along a face of the hammer to lock the hammer to the housing.
- 13. The method as claimed in claim 11 or claim 12, wherein the hammer-engaging face of the locking member engages the hammer at any selected point along at least a portion of a hammer face.